STL - St. Louis

Quanterra Incorporated 13715 Rider Trail North Earth City, Missouri 63045

314 298-8566 Telephone 314 298-8757 Fax



C0022093

CASE NARRATIVE

Bechtel Hanford Incorporated 3350 George Washington Way Richland, Washington 99352

February 16, 2000

Attention: Joan Kessner

RECEIVED APR 1 1 2000

EDMC

Project Number

: 34313

SDG

W03032

Number of Samples

two (2)

Sample Matrix
Data Deliverable

water Summary

Date SDG Closed

February 9, 2000

II. Introduction

On January 26, 2000, two (2) "water" samples were received by Quanterra, Richland and transferred to Quanterra, St. Louis for chemical analysis. The samples were received within temperature criteria. See the attached Sample Summary sheet for the client and lab Ids for these samples.

III. Analytical Results/ Methodology

The analytical results for this report are presented by analytical test. Each set of data includes sample identification information, analytical results and the appropriate detection limits.

Analyses requested:

VOA - 8240 GCMS: List-1 (33)

Deviation from Request:

There were no deviations.

IV. Definitions

The following codes are used to denote laboratory quality control samples and can be found in the data summary section of this report:

QCBLK- Quality Control Blank, Method Blank

QCLCS- Quality Control Laboratory Control Sample, Blank Spike

MS- Matrix Spike.

MSD- Matrix Spike Duplicate.



Bechtel Hanford Incorporated February 16, 2000

Project Number: 34313

SDG: W03032

Page 2

V. Comments

General:

The term "Detection Limit" used in the analytical data reports refers to either the lab's standard reporting limits or contractually required reporting limits, whichever is applicable.

Please refer to the attached cross-reference table for the standard preparation methods used at Quanterra, St. Louis.

Volatiles:

A Laboratory Control Sample, Method Blank, Matrix Spike and Matrix Spike Duplicate were analyzed with each preparation batch per the protocol for this analysis.

There are no comments or non-conformances associated with the Volatiles data.

I certify that this Data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature.

Reviewed and approved:

Marti Ward

St. Louis Project Manager

SAMPLE SUMMARY

F0A270224

<u>MO #</u>	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
D7XR6	001	BOWKT8	01/26/00	
D7XRJ	0 02	BOWKTO	01/26/00	

NOTE(S):

- The analytical results of the samples fisted above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit,
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

METHODS SUMMARY

F0A270224

PARAMETER		ANALYTICAL METHOD	PREFARATION METHOD
Volatile Organics by	GC/MS	SW846 8240A	SW846 8240A

References:

SW846

"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

STL - St. Louis

PSL20300 Page 1 QUANTERRA INCORPORATED Run Date: 1/27/00 CLIENT ANALYSIS SUMMARY Time: 16:07:21 Quanterra - St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

QUOTE/SAR #: 34313 LAB ID: F-0A270224-001

FROJECT MANAGER: MARTI WARD PROJECT #: INTERIM MONITOR

WORK ORDER: D7XR6

REPORT TO: Bechtel Hanford, Inc.

RECEIVING DATE: 1/27/00

P.O. NUMBER: MRC-SBB-A-19981

SAMPLING DATE: 1/26/00

SITE: C00-002

ANALYTICAL DUE DATE: 2/25/00N

AMOUNT REC"D: 3X40 STORAGE LOC: YAZ VIA SV127.0 0 REPORT DUE DATE: 3/11/00 PRIORITY: 30

LOT COMMENTS: Hanford Package and EDD requirements app SAMPLING TIME: 7:45

MATRIX: WATER

RECEIVING TIME: 8:30

2/09/00

SAMPLE ID: BOWKT8

QC FACKAGE: Special Report - see checklist SDG# : W03QZ

SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

WRK REQUEST EXTRACTION ANALYSIS <u> LOC</u> DATE EXP DATE EXP DATE

06 1/27/00 0/00/00

Volatile Organics, GC/MS (8240)

PURGE AND TRAP - 5 mL purge STL: HANFORD 8240 GCMS:LIST-1(33)

***** ANALYSIS *****

(I-15-FB-5I) D7XR6-1-01 Protocol: A QC Program: CLIENT: HANFORD

STL - St. Louis

PSL20300 PSL20300 Page 1 QUANTERRA INCORPORATED Run Date: 1/27/00 CLIENT ANALYSIS SUMMARY Time: 16:07:21 Quanterra - St. Louis User Id.: WILSONS

QUOTE/SAR #: 34313

QUOTE/SAR #: 34313 LAB ID: F-0A270224-001-D WORK ORDER: D7XR6 MSD

REPORT DUE DATE: 3/11/00

ANALYTICAL DUE DATE: 2/25/00N

RECEIVING TIME:

32

RECEIVING DATE: 1/27/00

SAMPLING DATE: 1/26/00

CLIENT: 127642 BECHTEL HANFORD, INC.

PROJECT MANAGER: MARTI WARD PROJECT #: INTERIM MONITOR

REPORT TO: Bechtel Hanford, Inc.
P.O. NUMBER: MRC-SBB-A-19981

P.O. NUMBER: MRC-SBB-A-19981 SITE: C00-002

AMOUNT REC"D: 3X40

AMOUNT REC"D: 3X40

STORAGE LOC: VAZ VIA 127.71

LOT COMMENTS: Hanford Package and EDD requirements app SAMPLING TIME: 7:45

MATRIX: WATER SAMPLE ID: BOWKT8 QC PACKAGE: Special Report - see checklist SDG# : W03027

SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth:

.00

WRK REQUEST EXTRACTION ANALYSIS

LOC DATE EXP DATE EXP DATE

Volatile Organics, GC/MS (8240) 06 1/27/00 0/00/00 2/09/00 PURGE AND TRAP - 5 mL purge

STL: HANFORD 8240 GCMS:LIST-1(33)

***** ANALYSIS ****

(I-15-FB-5I) D7XR6-1-03 Protocol: A QC Program: CLIENT: HANFCRD

PSL20300 Page 1 QUANTERRA INCORPORATED Run Date: 1/27/00 CLIENT ANALYSIS SUMMARY Time: 16:07:21 Quanterra - St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

QUOTE/SAR #: 34313 LAB ID: F-0A270224-001-S PROJECT MANAGER: MARTI WARD FROJECT #: INTERIM MONITOR WORK ORDER: D7XR6 MS

REPORT TO: Bechtel Hanford, Inc. RECEIVING DATE: 1/27/00 P.O. NUMBER: MRC-SBB-A-19981 SAMPLING DATE: 1/26/00

SITE: C00-002 ANALYTICAL DUE DATE: 2/25/00N AMOUNT REC"D: 3X40 REPORT DUE DATE: 3/11/00

STORAGE LOC: VK2 VIA SN 1-27-50 PRIORITY: 30

LOT COMMENTS: Hanford Package and EDD requirements app SAMPLING TIME: 7:45

MATRIX: WATER RECEIVING TIME: 8:30

SAMPLE ID: BOWKT8

QC PACKAGE: Special Report - see checklist SDG# : W03017

SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth: .00

WRK REQUEST EXTRACTION ANALYSIS ***** ANALYSIS ***** LOC DATE EXP DATE EXP DATE

06 1/27/00 0/00/00 2/09/00 Volatile Organics, GC/MS (8240)

PURGE AND TRAP - 5 mL purge

STL: HANFORD 8240 GCMS:LIST-1(33)

(I-15-FB-5I) D7XR6-1-02 Protocol: A QC Program: CLIENT: HANFORD

STL - St. Louis

PSL20300 PSL20300 Fage 1 QUANTERRA INCORPORATED Run Date: 1/27/00 CLIENT ANALYSIS SUMMARY Time: 16:07:21 Quanterra - St. Louis User Id.: WILSONS

CLIENT: 127642 BECHTEL HANFORD, INC.

QUOTE/SAR #: 34313

PROJECT MANAGER: MAKIL MAKIL MANAGER: MAKIL MAKIL MANAGER: MAKIL MAKATA MAKIL MAKIL MAKIL MAKIL MAKIL MAKIL MAKIL MAKIL MAKIL MAKIL

STORAGE LOC: VAZ VIA 8W/.27.67

REPORT DUE DATE: 3/11/00

PRIORITY: 30

LOT COMMENTS: Hanford Fackage and EDD requirements app SAMPLING TIME: 8:50

MATRIX: WATER

RECEIVING TIME:

8:30

QC FACKAGE: Special Report - see checklist SDG# : W0301/1 SAMPLE COMMENTS:

Beginning Depth: .00 Ending Depth:

.00

WRK REQUEST EXTRACTION ANALYSIS
LOC DATE EXP DATE EXP DATE

Volatile Organics, GC/MS (8240)

06 1/27/00 0/00/00 2/09/00

PURGE AND TRAP - 5 mL purge

STL: HANFORD 8240 GCMS:LIST-1(33)

***** ANALYSIS *****

(I-15-FB-5I) D7XRJ-1-01 Protocol: A QC Program: CLIENT: HANFORD

Da							40						
้ กับ DNNI	3032			,	CHAIN OF	CUSTODY/S	SAMPLE AN	NALYSIS R	EQUEST	C.O.C. # C00-002-2			
	Yours				Contact/F			,	Telephone No.	MSIN	FAX		
AENo.	yourse)			Sampling				Purchase Order/Charge Code				
C00-002 rolect Title					HANK (Loghook)	DRD SITE			Ice Chest No.	st No. Temp.			
20011PHAM GW	MONITORI	NC O	CTORER 199	9		WH-SWL	- H 30, F	AGE 89	Ice Chest No. SHIL S	Air BIII NOUS Bine 004012605714			· · · · · ·
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rotorol CERCLA									Offsite Property No.				,
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Sample No.	Lab ID		Date	Time	No/Type Container							Preservative	
BOWKT8		W	01-26-00	67.45	3x40-mL aGs'	8240_VOA_GCMS:	8240_VOA_GCMS: List-1 (33)					HClori	125O4 to 2001 4C
BOWKT8	 	W		1	1x20-mL P	Activity Scan	Activity Scan mot received					None	
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Collector							····	Contact/R	ronester			Telephone No.	MSIN FAX	1 of 1	
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AI≅No. _C00-002	·							Sampling (Purchase Order/Chara			
rofect Title 20011PHAM GW	MONITORI	NG C	Y CTORE	R 199	q.			Logbook	40. W/n - 5/L	IL H 30	PAGE 89	Ice Chest No. Sunt	5 86 Temp.		
hipped To (Lab)									Shinment			Bill of Lading/Air Bill	No.		
Opputerra Incorp	orated							L_GO⊻1. Data Turn	VEJICLE			Offsite Property No.			
CERCLA OSSIBLE SAMP	I R HAZADI	15/01	MARK					45 Day		SPECIAL INST	RUCTIONS HAL	d Time	Total Activity Exemption	Ves V No.	
ut Cas												?-1704) & JH Kessner (372-94	E7)		
Sample No.	Lab II)	•	Dat	c	Ti	me	No/Type	Container			Sample Analy	ysis		Preservative	
BOWKTO		W	61-26	.00	00	5h	3x40-mL	aGs'	8240, VOA, GCMS: List-1 (33)						
Domition		144	1		<u>U. L.</u>) J C	1.00		Acquity Scan						
ภ							0.1000		707-014-190-1	- 00 (H				HCI to pH <2	
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linquished By							Date/i	ime	Received By			Date/Fine	O = Oil A = Air	V = Veretaline X = Other	
linquished By							Date/I	ine	Received By			Date/Time			
INAL SAMPLE DISPOSITION	Disposal !	dethod	(rg. Ret	m lo i	ustona	a, per l	ab procedure	, used in proc	in the second se		Disposed By		Date/Time		





Condition Upon Receipt Variance Report St. Louis Laboratory

Login	No.:	FOA2	<u>702</u> 2	4
	į	WO30	32	

Shipp	er/No		314		ated by	1-27-80, Time: 830 V: SUASM802 Numbers: C00-002-26 C00-002-16				
1.		Sample received broken/leaking.		8.		Sample ID on container does not match sample ID				
2.		Sample received without proper preservative.				on paperwork. Explain:				
		☐ Cooler temperature not within 4-C ± 2	2·C							
		Record temperature:								
		□ pH		9.		All coolers on airbill not received with shipment.				
		Other:		10.		Other (explain below):				
3.		Sample received in Improper container.				•				
4.		Sample received without proper paperwork. Exp	plain:							
5.		Paperwork received without sample.								
6.		No sample ID on sample container.								
7.		Custody tape disturbed/broken/missing.								
•	Notes: Notes:									
Corre	ctive A	action:								
	(Client's Name:	Informed verb	ally on	: _	Ву:				
	C	Client's Name:	Informed in w	riting c	on: _	By:				
	S	ample(s) processed "as is",								
	Comn	· · · · · · · · · · · · · · · · · · ·			I1	f teleased, notify:				
		0	10							
Sampl	e Cont	tol Supervisor Review: (or designate)	2510 182	<u></u>	Date	127-00				
Projec	t Mana	agement Review:	Ward		Date	1.27.00				
		SIGNED ORIGINAL :	MUST BE RETA	INED :	IN THE	PROJECT FILE				

SL-ADMINAXIA, Revised 12/12/98

Client Sample ID: BOWKT8

GC/MS Volatiles

Lot-Sample #...: F0A270224-001 Work Order #...: D7XR6101 Matrix.....: WATER

 Date Sampled...:
 01/26/00
 Date Received..:
 01/27/00

 Prep Date....:
 02/02/00
 Analysis Date..:
 02/02/00

 Prep Batch #...:
 0035170
 Output
 02/02/00

Dilution Factor: 1 Method.....: SW846 8240A

		REPORTING	3
PARAMETER	RESULT	_ LIMIT	UNITS
Acetone	7.0 J,B	20	ug/L
Benzene	ND	5.0	ug/L
Bromodichloromethane	ND	5.0	ug/L
Bromoform	1.0 J	5. 0	ug/L
Bromomethane	ND	10	ug/L
2-Butanone	ИD	20	ug/L
Carbon disulfide	ND	5.0	ug/L
Carbon tetrachlorid e	ND	5.0	ug/L
Chlorobenzene	ИD	5.0	ug/L
Dibromochloromethane	ND	5.0	ug/L
Chloroethane	ND	10	ug/L
Chloroform	ND	5.0	ug/L
Chloromethane	ND	10	ug/L
1,1-Dichloroethane	ND	5.0	ug/L
1,2-Dichloroethane	ND	5.0	ug/L
1,1-Dichloroethene	ND	5.0	ug/L
1,2-Dichloroethene	ДИ	5.0	ug/ ${f L}$
(total)			
1,2-Dichloropropane	ND	5.0	ug/L
cis-1,3-Dichloropropene	ND	5.0	ug/L
trans-1,3-Dichloropropene	ND	5.0	ug/L
Ethylbenz ene	ND	5. 0	ug/L
2-Hexanone	ND	20	ug/L
Methylene chloride	ND	5.0	ug/L
4-Methyl-2-pentanone	ND	20	ug/L
Styrene	ND	5.0	ug/L
1,1,2,2-Tetrachloroethane	ND	5.0	ug/L
Tetrachloroethene	ND	5.0	ug/L
Toluen e	ИD	5.0	ug/L
1,1,1-Trichlorcethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
Vinyl chloride	ИD	10	ug/L
Xylenes (total)	ND	5.0	ug/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	_
Bromofluorobenzene	94	(69 - 113	3)
Toluene-d8	104	(68 - 132	2)
1,2-Dichloroethane-d4	104	(72 - 141	7)

(Continued on next page)

Client Sample ID: BOWKT8

GC/MS Volatiles

Lot-Sample #...: F0A270224-001 Work Order #...: D7XR6101 Matrix..... WATER

NOTE(S):

¹ Estimated result. Result is less than RL.

B. Method blank contamination. The associated method blank contains the target analyte at a reportable level.

BOWKT8

GC/MS Volatiles

Lot-Sample #: FCA270224-001 Work Order #: D7XR6101 Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

		ESTIMATED		RETENTION	
PARAMETER	CAS #	RESULT		TIME	UNITS
UNKNOWN		14	Μ	23.023	uq/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of 1.

Client Sample ID: BOWKTO

GC/MS Volatiles

Lot-Sample #...: F0A270224-002 Work Order #...: D7XRJ101 Matrix....: WATER

 Date Sampled...:
 01/26/00
 Date Received...:
 01/27/00

 Prep Date....:
 02/02/00
 Analysis Date...:
 02/02/00

Prep Batch #...: 0035170

Dilution Factor: 1 Method.....: SW846 8240A

		REPORTIN	G
PARAMETER	RESULT	LIMIT	UNITS
Acetone	ND	20	ug/L
Benze ne	ND	5.0	ug/L
romodichloromethane	ND	5.0	ug/L
romoform	ND	5.0	ug/L
Bromomethane	ND	10	ug/L
-Butanone	ND	20	ug/L
arbon disulfide	ND	5.0	ug/L
arbon tetrachloride	34	5.0	սց/ Ն
hlorobenzen e	ND	5.0	ug/L
ibromochloromethane	ND	5.0	ug/L
Chloroethan e	ND	10	ug/L
Chloroform	ND	5.0	ug/ L
Chloromethane	ИD	10	ug/L
,1-Dichloroethane	ND	5.0	ug/L
,2-Dichloroethane	ND	5.0	ug/L
,1-Dichloroethene	ND	5.0	ug/L
,2-Dichloroethene (total)	ND	5.0	ug/L
,2-Dichloropropane	ND	5.0	ug/L
is-1,3-Dichloropropene	ND	5.0	ug/L
rans-1,3-Dichloropropene	ИD	5.0	ug/L
thylbenzene	ND	5.0	ug/L
-Hexanone	ND	20	ug/L
ethylene chloride	ND	5.0	ug/L
-Methyl-2-pentanone	ND	20	ug/L
tyrene	ND	5.0	ug/L
,1,2,2-Tetrachloroethane	ND	5.0	ug/L
etrachloroethene	ND	5.0	ug/L
oluene	ND	5.0	ug/L
.,1,1-Trichloroethane	ND	5.0	ug/L
1,1,2-Trichloroethane	ND	5.0	ug/L
Trichloroethene	ND	5.0	ug/L
inyl chloride	ND	10	ug/L
ylenes (total)	ND	5.0	ug/L
	PERCENT	RECOVERY	!
SURROGATE	RECOVERY	LIMITS_	
Bromofluorobenzene	96	(69 - 11	L3)
Toluene-d8 1,2-Dichloroethane-d4	106	(68 - 13	32)

BOWKTO

GC/MS Volatiles

Lot-Sample #: F0A270224-002 Work Order #: D7XRJ101 Matrix: WATER

MASS SPECTROMETER/DATA SYSTEM (MSDS) TENTATIVELY IDENTIFIED COMPOUNDS

		ESTIMATED	RETENTION	
PARAMETER	CAS #	RESULT	TIME	UNITS
UNKNOWN		12 M	23.005	ug/L

NOTE(S):

M: Result was measured against nearest internal standard assuming a response factor of L.



Quanterra 2800 George Washington Way Richland, Washington 99352-1613

509 375-3131 Telephone 509 375-5590 Fax

CERTIFICATE OF ANALYSIS

Bechtel Hanford, Inc. 3350 George Washington Way Richland, WA 99352

March 19, 2000

SAF Number

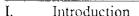
Attention: Joan Kessner

C00-002

Date SDG Closed : February 9, 2000

Number of Samples : One (1)
Sample Type : Water
SDG Number : W03032

Data Deliverable : 45 Day / Summary



On January 26, 2000, one water sample was received at the Quanterra Richland Laboratory (QRL) for radiochemical analysis. Upon receipt, the sample was assigned the following laboratory ID number to correspond with the Bechtel Hanford, Inc. (BHI) specific ID:

QRL ID#BHI ID#MATRIXDATE OF RECEIPT9D7WX010B0WKT0WATER1/26/00

II. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were: Liquid Scintillation Counting

Technetium-99 by method RICH-RC-5065

Total Uranium

Total Uranium by method RICH-RC-5058



Bechtel Hanford, Inc. March 19, 2000 Page 2

III. Quality Control

The analytical results for each analysis performed under SDG W03032 include a minimum of one Laboratory Control Sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

IV. Comments

Liquid Scintillation Counting

Technetium-99 by method RICH-RC-5065:

The LCS, batch blank, sample, sample duplicate (B0WKT0) and sample matrix spike (B0WKT0) results are within contractual requirements.

Total Uranium

Total Uranium by method RICH-RC-5058:

The LCS, batch blank, sample, sample duplicate (B0WKT0) and sample matrix spike (B0WKT0) results are within contractual requirements.

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Ackie Waddell
Project Manager



SAMPLE RESULTS

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

9D7WX010

MATRIX:

WATER

CLIENT ID:

B0WKT0

DATE RECEIVED:

1/26/2000 3:00:00 PM

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER
TC-99	7.71E+02		1.4E+01	6.6E+01	1.24E+01	pCi/L	100.00%	RICHRC5078
TOTAL-URANIUM	2.15E+02		0.0E+0 0	3.5E+01	7.29E-02	ug/ L		RICHRC5058



DUPLICATE RESULTS

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D7WX014R

MATRIX:

WATER

CLIENT ID:

BOWKTO DUP

DATE RECEIVED:

1/26/2000 3:00:00 P

ORIG LAB SAMPLE ID: 9D7WX010

ANALYTE	DUP RESULT Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)		REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TC-99	7.83E+02	1.4E+01	6.7E+01	I.23E+0	1 pCi/L	100.00%	RICHRC5078	7.71E+02	1.58%



DUPLICATE RESULTS

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D7WX016R

MATRIX:

WATER

CLIENT ID:

B0WKT0 DUP

DATE RECEIVED:

1/26/2000 3:00:00 P

ORIG LAB SAMPLE ID: 9D7WX010

ANALYTE	DUP RESULT C	COUNTING ERROR (2s)	TOTAL ERROR (2 s)		REPORT UNIT	YIELD	METHOD NUMBER	ORIG RESULT	RPD
TOTAL-URANIUM	2.22E+02	0.0E+00	3.6E+01	7.29E-02	2 ug/L		RICHRC5058	2.15E+02	2.93%



BLANK RESULTS

LAB NAME:

QUANTERRA, Richland

SDG /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D8J0411B

MATRIX:

WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER	_
TC-99	-1.63E+00	U	8.6E-02	1.1E+01	1.23E+01	pCi/L	100.00%	RICHRC5078	



BLANK RESULTS

LAB NAME:

QUANTERRA, Richland

SDG /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D8J0611B

MATRIX:

WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2s)	TOTAL ERROR (2s)	MDA/IDL	REPORT UNIT	YIELD	METHOD NUMBER	
TOTAL-URANIUM	4.66E-02	U	0.0 E+00	1.1E-02	7.29E-02	ug/L		RICHRC5058	

Number of Results: 1

0008



LABORATORY CONTROL SAMPLE

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D8J0412S

MATRIX:

WATER

ANALYTE	RESULT	Q	COUNTING ERROR (2 s)	TOTAL ERROR (2 s)	****	REPORT UNIT		EXPECTED	RECOVERY
TC-99	5.47E+02		1.1E+01	5.0E+01	1.23E+01	pCi/L	100.00%	5.43E+02	100.75%



LABORATORY CONTROL SAMPLE

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D8J0612S

MATRIX:

WATER

ANALYTE	RESULT	COUNTING Q ERROR (2 s)	TOTAL ERROR (2 s		REPORT UNIT	YIELD	EXPECTED	RECOVERY
TOTAL-URANIUM	8.79 E-01	0.0E+0 0	1.4E-01	7.29E-02	ug/L		9.07E-01	96.88%



MATRIX SPIKE RESULTS

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D7WX013W

MATRIX:

WATER

ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2 s)	TOTAL ERROR (2s)	MDA/IDL		SAMPLE RESULT	EXPECTED	RECOVERY
TC-99	4.03E+0 3	3.2E+01	3.0E+02	1.24E+01	pCi/L	7.71E+02	3.63E+03	110.84%



MATRIX SPIKE RESULTS

LAB NAME:

QUANTERRA, Richland

SDG: /RPT GRP:

W03032 / 10072

LAB SAMPLE ID:

D7WX015W

MATRIX:

WATER

•	ANALYTE	SPIKE RESULT* Q	COUNTING ERROR (2 s)	TOTAL ERROR (2s)	MDA/IDL		SAMPLE RESULT	EXPECTED	RECOVERY
	TOTAL-URANIUM	3.05E+02	0.0E+0 0	7.3E+01	7.29E-02	ug/L	2.15E+02	9.05E+01	337.06%

PNNL	CHAIN O						CUSTODY/	SAMPLE	ANA	LYSIS I	REQUEST		C.O.C. #	C00-002-16
Collector						Contact/Ro	equester			<u> </u>	Telephone No.	MSIN	Page	1 of 1
K.J.	YOU	MG.				JH KES	SNER	(509) 375-4688		FAX				
SAF No. C00-002						Sampling C HANFO			Purchase Order/Charg					
Project Title 200UPHAM GW	MONUTODI	NC 0	CTOBER	1000		Logbook N		, W 70	و	11. S.C.	Ice Chest No. Sun	586 T	`emp,	
hipped To (Lab)		NG. U	K. IOBEK	999		Method of	Shipment	<u> </u>		7201	Bill of Lading/Air Bill !			<u></u>
<u>Ouanterra Incorpor</u> Protocol	ated					GOVT. \ Data Turn	VEHICLE				Offsite Property No.		,	
CERCLA						45 Days		,						
OSSIBLE SAMPL					 .	. 1		SPECIAL INST FAX copies of Q	RUCTIC	DNS Hoto o DL Siewart (372	l Time -1704) & JH Kessner (372-948	Total Activity	Exemption:	Yes 🗹 No 🗀
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Sample No.	Lab ID	*	Date	T	ime	No/Type Container				Sample Analy	sis	· · · · · · · · · · · · · · · · · · ·		Preservative
BOWKTO		W	01-26-6	08	350	3x40-mL aGs*	8240_VOA_GCMS: L	.ist-1 (33)	un	the t	r. Lavi	\sim		HCl or H2SO4 to pH <2 Cool 4C
B0WKT0		W	1		Ī	1x20-mL P+	Activity Scan				7 333 33			None
вомкто		W		-		3x1000-mL G/P	TC99_SEP_LSC: Tc	99 (1)	ΓG	WX	$\overline{}$			HCl to pH <2
BOWKTO		W				1x500-mL G/P	UTOT_KPA: Uranium	i (1)		, , , , ,				HNO3 to pH <2
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Relinquished By) and	70-7			Date/Time	Received By	2 / 10-10			Date/l'ime	S = Soil SE = Sed	ment	DS = Drum Solid DL = Drum Liqui
											Ì	SO = Soli SL = Sloc W = Wat	lee '	T = Tissue WI = Wine
Relinquished By			-			Date/Time	Received By				Date/Time	W = Wat O = Oil A = Air	.	L = Liquid V = Vegetation X = Other
Relinquished By						Date/Time	Received By				Date/Time			
FINAL SAMPLE DISPOSITION	Disposal N	1 ethod	(e.g., Return	to custon	er, per la	b procedure, used in proce	ss)		Disposed I	Ву			Date/Time	<u></u>
016														

PNNL					CHAIN OF	CUSTODY/	SAMPLI	E ANALYSI	S REQU	EST		C.O.C. #	C00-002-26	
Collector /					Contact/R	equester.	ie No.	MSIN	FAX	1 01 1				
T. 70	oung				JH KES!	SNER			(509) 3	75-4688		IAA		
SAF No.	_				Sampling (Purchase	Purchase Order/Charge Code				
<u>C00-002</u> Project Title					Logbook N			\	a Ice Chest	Ice Chest No. Sull 580 Temp.				
200UPHAM GW MO	NITORIN	G.OC	CTOBER 199	9		win-suic	- H 30,	PAGE 8	9	Bill of Lading/Air Bill No.				
Shipped To (Lab) Ouanterra Incorporates	d				Method of GOVT.	Shipment VEHICLE			Rill of La	iding/Air Bill	No.			
Protocol					Data Turn	around	•		Offsite P	roperty No.				
<u>CERCLA</u> POSSIBLE SAMPLE H	IAZARDS	/REN	MARKS		45 Days	1	SPECIAL INS	STRUCTIONS	Hold Time		Total Activi	ty Exemption:	Yes ✔ No ☐	
** **				T09	7240 14	44		QES log-in to DL Stewart		Kessner (372-94			,,,,	
· · · · · · · · · · · · · · · · · · ·	ab ID	*	Date	Time	No/Type Container			Sample A	Analysis				Preservative	
BOWKT8		w		16	3x40-mL aGs*	8240_VOA_GCMS: L	ist-1 (33)	7 1 1	D 0.	90	<u>1</u>		HCI or H2SO4 to	
BOWKT8		w	01-26-00	6747	1x20-ml. P	Activity Scan	· · · · · · · · · · · · · · · · · · ·	6 dry &	120 7	<u> </u>	$N \cdot \Delta$	THIA	DH <2 Cool 4C None	
BUVVIIO		**	4	4	TALO (III. 1 ;	The state of the s		, ,						
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D-U	الرا		Sinn		Date/Time (CC)	Deceived Ry 116	O CTOMPrint	Sien	Dat	e/Time /500	<u> </u>	Matrix	*	
Relinquished By	Print		Sign		Date/Time 500	1211 30	+ 12 1	Sign						
K. YOUNG	Da	/	<u>`</u>		01-26-00	# DW KYE	up pro				S = Sc SE = Sc	oil edi me nt	DS = Drum Solid DE = Drum Liqui	
Relinquished By					Date/Time	Received By		•	Dat	e/Time	SO = Sc	olid	T = Tissue WI = Wine	
						.~		······································			SI = SIW = W	aler	I. = Lionid	
Relinquished By					Date/Time	Received By			Dat	e/Time	O = O A = A		V = Vegetation X = Other	
						ļ. <u>.</u>					<u> </u>			
Relinquished By					Date/Time	Received By			Dat	e/Time				
FINAL SAMPLE DISPOSITION	Disposal Mo	thod ((e.g., Return to	customer, per l	ab procedure, used in proc	ess)		Disposed By				Date/Time		